

ANALYSING SPECTRUM AUCTION

Relevant for: Science & Technology | Topic: IT, Internet and Communications

The Union Cabinet has cleared a mega auction of radio spectrum in various bands for commercial mobile services. Based on the recommendation of the Telecom Regulatory Authority of India (TRAI), the government is planning to auction spectrum in the sub-GHz bands of 600, 700, 800 and 900 MHz; in the mid-bands of 1,800, 2,100, 2,300, 2,500 and 3,300 MHz, and in the high-frequency band of 26 GHz. The total spectrum to be auctioned is about 72 GHz, compared to about 2.2 GHz put on the block last year. The cumulative reserve price — and hence the potential revenue accrual to the government at reserve prices — is about 4,31,605 crore compared to about 3,90,000 crore last year. However, the realised value in last year's auction was just about 20% of the reserve price at 74,000 crore, with the 700 MHz and 2,500 MHz band not being sold. While the 2021 auction could be considered a failure from the auctioneer's point of view, will the auction scheduled for this month be successful? There are many factors that determine the success of spectrum auction.

The first is the reserve price. Our research on a cross-country spectrum database shows that the reserve price significantly and positively correlates with the winning bid price. However, a higher reserve price also inhibits bidders from bidding for more spectrum blocks, resulting in lower amounts of spectrum sold. If the quantity effect is more than the price effect, it results in reduced revenues for the government exchequer, as it happened in 2021. The government has accepted TRAI's recommendations on the reserve process across different bands, which is less than what was specified for the respective bands last year. Though some of the bands are high-priced compared to other countries, the average price of the new bands such as 3.3 GHz and 26 GHz, at \$0.02 and \$0.0004, are in line with international prices on per MHz per pop basis. However, the evolving heterogeneity within each of the 22 LSAs (licensed share access) makes it difficult for the bidders to ascertain the true value of the spectrum given the reserve prices. Hence, the uncertainty in the winning bid prices.

Second, the willingness to pay by the telcos depends on their position vis-à-vis Over The Top providers who are providing substitute services such as Voice Over Internet Protocol; and capturing a greater mind share of customers while remaining relatively invisible to government regulators. However, the erosion of the position of telcos vis-à-vis OTTs in the context of their relationship in the overall digital value network of devices, connectivity and apps could result in a lower willingness to pay.

The 5G capable networks provide massive Machine Type Communication, and Ultra-Reliable Low Latency Communications that are likely to be adopted on a large scale by enterprise users in manufacturing, healthcare, and utilities. These requirements can be fulfilled by the licensed telcos by building captive non-public networks (CNP) or leasing/ sharing the allotted spectrum to the enterprises. However, TRAI has recommended that apart from these options, the firms can directly lease spectrum from the government for building their own CNPs, which is proving to be a thorn for the telcos. This is where telcos should lead from the front by forging alliances with managed service providers to augment their enterprise offerings, which in turn will result in a demand for 3.3 and 26 GHz bands in the auction.

In our research on spectrum auctions held across countries, we found that reserve price and the number of bidders in the auction have a positive effect on auction. Both these factors have been reduced from the past auctions. In fact, the number of bidders in 2016 auction was seven compared to three now. Hence, we expect the winning bid prices to decrease accordingly. However, our analysis shows that the total quantum of spectrum put on auction has a negative

effect on winning bid prices. Since the quantum of spectrum in this auction is about 35 times more than last year, including the new bands in 600 MHz, 3.3 GHz and 26 GHz, we expect that it will have substantial negative effects on spectrum prices. On the other hand, abolition of annual spectrum usage charges for all spectrum procured in this auction and the deferred payment option incentivises bidders to be active in the auction.

In last year's auction, out of a total of 141 offerings, all the 108 sold were at reserve prices. We don't expect much deviation this year either. So, once again, the reserve price is expected to dominate the minds of bidders in the months to come.

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